

## Crew Pushoff/Landing Qualify



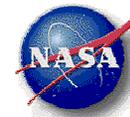
Data Description	
Sensor	MAMS HiRAP 100.0 sa/sec (1000.00 Hz)
Location	LAB1O2, ER1, Lockers 3,4
Inc/Flight	Increment: 7 Flight: 6S
Plot Type	

### Notes:

In support of an experiment called Pore Formation and Mobility Investigation (PFMI), Ed Lu took about 7 minutes to perform several push/pulls at the MSG handrail along with pushoffs and landings near the Microgravity Science Glovebox (MSG). The objective was to ascertain the ability of the MAMS HiRAP sensor in ER1 (LAB1O2) to detect accelerations that might affect the PFMI and other experiments in the MSG. The handrail used for the push/pull test is just forward of the MSG location in LAB1S3, while the pushoffs and landings were primarily between deck and overhead racks near the MSG (between LAB1D2 and LAB1O2). The figure shown here is a screenshot of video obtained from the JSC that shows the complete test by Expedition 7 crew member, Ed Lu.



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Regime:	Vibratory
Category:	Crew
Source:	Pushoff/Landing

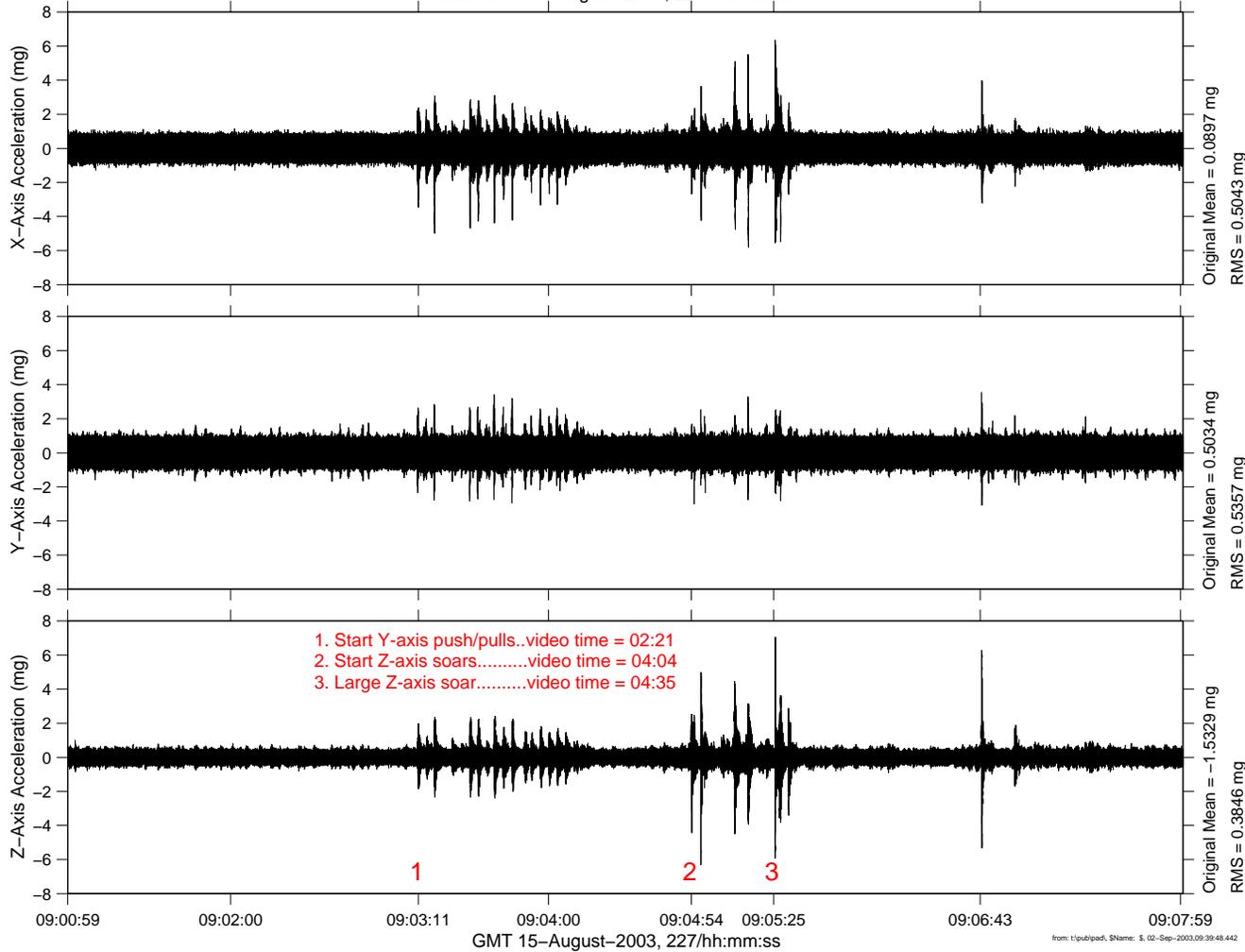
# Crew Pushoff/Landing Quantify

mams, hirap at LAB1O2, ER1, Lockers 3,4:[138.68 -16.18 142.35]  
1000.0000 sa/sec (100.00 Hz)

Lu MSG Test For PFM1

Increment: 7, Flight: 6S  
SSAnalysis[ 0.0 0.0 0.0]

Start GMT 15-August-2003, 227/09:00:58.543



Data Description	
Sensor	MAMS HiRAP 100.0 sa/sec (1000.00 Hz)
Location	LAB1O2, ER1, Lockers 3,4
Inc/Flight	Increment: 7 Flight: 6S
Plot Type	time series

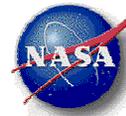
### Notes:

These tests performed by Ed Lu consisted of 20 push/pulls at the MSG handrail starting at about GMT 15-Aug-03, 227/09:03:11 (this time was MAMS recorded GMT, which was ahead of expected GMT by about 50 seconds). The peak acceleration vector magnitude was about 5 mg for the handrail push/pulls, while the set of 3 pushoff/landings that started at about GMT 15-Aug-03, 227/09:04:54 had a peak magnitude of just over 8 mg. This large transient came at GMT 15-Aug-03, 227/09:05:25. Close examination of the  $Z_A$ -axis data shows that pushoff/landing type of impacts tends to excite a structural mode at about 7.5 Hz. This resonance continues noticeably for a couple of seconds or so before subsiding. The PIMS team at the NASA GRC has archived a copy of the video that was shot for this test.

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